

1. A method of encrypting an unencrypted television program, comprising:  
sampling the unencrypted television program at a specified time interval;  
for each sample:  
    encrypting the sample according to a first encryption method to create  
    a first encrypted sample; and  
    encrypting the sample according to a second encryption method to  
    create a second encrypted sample.
2. The method according to claim 1, further comprising, combining the first and  
second encrypted samples with unsampled portions of the unencrypted television  
program to produce partially dual encrypted television programs.
3. The method according to claim 2, further comprising distributing the partially  
dual encrypted television program over a communication medium.
4. The method according to claim 2, further comprising assigning a of plurality  
primary packet identifiers (PID) to data packets containing unencrypted portions of  
the television program, the primary packet identifiers associating the unencrypted  
portion with the television program.
5. The method according to claim 2, further comprising assigning a plurality of  
primary packet identifiers (PID) to data packets containing first encrypted samples  
of the television program, the primary packet identifiers associating the first  
encrypted samples with the television program.
6. The method according to claim 2, further comprising assigning a plurality of  
secondary packet identifiers (PID) to data packets containing second encrypted  
samples of the television program, the secondary packet identifiers associating the  
second encrypted samples with the television program.

- 1        7.        The method according to claim 2, further comprising:  
2                assigning a plurality of primary packet identifiers (PID) to data packets  
3                containing unencrypted portions of the television program, the primary packet  
4                identifiers associating the unencrypted portions with the television program;  
5                assigning the plurality of primary packet identifiers to data packets containing  
6                first encrypted samples of the television program, the primary packet identifiers  
7                associating the first encrypted samples with the television program; and  
8                assigning a plurality of secondary packet identifiers to data packets  
9                containing second encrypted samples of the television program, the secondary  
10                packet identifiers associating the second encrypted samples with the television  
11                program.  
12  
13        8.        The method according to claim 7, further comprising transmitting system  
14                information to identify the primary and secondary PID associated with the television  
15                program.  
16  
17        9.        The method according to claim 1, wherein the sample comprises a data  
18                associated with a frame of video.  
19  
20        10.       The method according to claim 1, wherein the sample comprises at least one  
21                packet of data.  
22  
23        11.       The method according to claim 1, wherein the specified time interval  
24                comprises a randomly occurring time interval.  
25  
26        12.       The method according to claim 1, further comprising distributing at least one  
27                of the first and second encrypted samples separately from unsampled portions of the  
28                unencrypted television program.  
29

1        13.    An electronic storage medium storing instructions which, when executed on  
2        a programmed processor, carry out the method according to claim 1.

3  
4        14.    An electronic transmission medium carrying an encrypted television signal  
5        encrypted by the method according to claim 1.  
6

1        15.    An encrypted television signal, comprising:  
2                a first encrypted sample of the television signal, the first encrypted sample  
3 comprising a first sample encrypted under a first encryption method;  
4                a second encrypted sample of the television signal, the second encrypted  
5 sample comprising the first sample encrypted under a second encryption method;  
6 and  
7                an unencrypted portion.

8  
9        16.    The encrypted television signal according to claim 13, wherein the television  
10 signal comprises a digital television signal, and wherein the first encrypted samples  
11 and second encrypted samples comprise first encrypted packets and second  
12 encrypted packets, and the unencrypted portion comprises unencrypted packets.

13  
14        17.    The encrypted television signal according to claim 16, wherein the digital  
15 television signal complies with an MPEG standard, and wherein the first encrypted  
16 packets are identified by a first packet identifier, and wherein the second encrypted  
17 packets are identified by a second packet identifier.

18  
19        18.    The encrypted television signal according to claim 14, wherein the digital  
20 television signal complies with an MPEG standard, and wherein the unencrypted  
21 packets are identified by a first packet identifier, and wherein the first encrypted  
22 packets are identified by the first packet identifier, and wherein the second  
23 encrypted packets are identified by a second packet identifier.  
24  
25

1 19. A method of encrypting an unencrypted television program, comprising:  
2 sampling the unencrypted television program at a specified time interval; and  
3 for each sample, encrypting the sample according to a first encryption method  
4 to create a first encrypted sample for the television program.  
5

6 20. The method according to claim 19, further comprising, combining the first  
7 encrypted samples with the unsampled portions of the unencrypted television  
8 program to produce a partially encrypted television program.  
9

10 21. The method according to claim 20, further comprising distributing the partially  
11 encrypted television program over a cable television system.  
12

13 22. The method according to claim 20, further comprising assigning a packet  
14 identifier (PID) to data packets containing unencrypted portions of the television  
15 program, the packet identifier associating the unencrypted portion with a particular  
16 television program.  
17

18 23. The method according to claim 20, further comprising assigning a packet  
19 identifier (PID) to data packets containing first encrypted samples of the television  
20 program, the packet identifier associating the first encrypted samples with a  
21 particular television program.  
22

23 24. The method according to claim 20, further comprising assigning a secondary  
24 packet identifier (PID) to data packets containing first encrypted sample of the  
25 television program, the secondary packet identifier associating the first encrypted  
26 samples with a particular television program.  
27  
28

1 25. The method according to claim 20, further comprising assigning a packet  
2 identifier (PID) to data packets containing first encrypted samples and unencrypted  
3 portions of the television program, the packet identifier associating the first  
4 encrypted samples and the unencrypted portions with a particular television  
5 program.

6  
7 26. The method according to claim 20, further comprising  
8 assigning a primary packet identifier (PID) to data packets containing  
9 unencrypted portions of the television program, the packet identifier associating the  
10 unencrypted portions with a particular television program; and  
11 assigning a secondary packet identifier (PID) to data packets containing  
12 encrypted samples of the television program, the secondary packet identifier  
13 associating the encrypted samples with the particular television program  
14

15 27. The method according to claim 20, wherein the sample comprises a data  
16 associated with a frame of video.

17  
18 28. The method according to claim 19, wherein the sample comprises at least one  
19 packet of data.

20  
21 29. An electronic storage medium storing instructions which, when executed on  
22 a programmed processor, carry out the method according to claim 19.

23  
24 30. An electronic transmission medium carrying an encrypted television program  
25 encrypted by the method according to claim 19.  
26

1 31. A method of encrypting an unencrypted television program, comprising:  
2 encrypting N periods out of every M periods of the television program  
3 according to a first encryption method, where M is greater than N; and  
4 encrypting the N periods of the television program according to a second  
5 encryption method.  
6

7 32. The method according to claim 31, further comprising, combining the first and  
8 second encrypted periods with unencrypted periods to produce a partially dual  
9 encrypted television program.

10  
11 33. The method according to claim 32, further comprising distributing the partially  
12 dual encrypted television program over a cable television system.

13  
14 34. The method according to claim 32, further comprising assigning a primary  
15 packet identifier (PID) to unencrypted periods of the television program.

16  
17 35. The method according to claim 32, further comprising assigning a primary  
18 packet identifier (PID) to periods encrypted under the first encryption method.

19  
20 36. The method according to claim 32, further comprising assigning a secondary  
21 packet identifier (PID) to periods encrypted under the second encryption method.  
22

23 37. The method according to claim 32, further comprising:  
24 assigning a primary packet identifier (PID) to unencrypted periods of the  
25 television program;  
26 assigning a primary packet identifier (PID) to periods encrypted under the first  
27 encryption method; and  
28 assigning a secondary packet identifier (PID) to periods encrypted under the  
29 second encryption method.  
30

1 38. The method according to claim 37, further comprising transmitting system  
2 information to identify the primary and secondary PID associated with the television  
3 program.

4  
5 39. The method according to claim 32, wherein the period comprises data  
6 associated with a frame of video.

7  
8 40. The method according to claim 32, wherein the period comprises at least one  
9 packet of data.

10  
11 41. The method according to claim 31, wherein the N periods and M periods are  
12 selected randomly.

13  
14 42. An electronic storage medium storing instructions which, when executed on  
15 a programmed processor, carry out the method according to claim 32.

16  
17 43. An electronic transmission medium carrying an encrypted television program  
18 encrypted by the method according to claim 32.  
19



1       44.    A partially encrypted television signal, comprising:  
2            a first portion of the television signal, the portion being encrypted under a first  
3 encryption method and under a second encryption method; and  
4            an unencrypted portion, wherein for every M periods of the television signal,  
5 N periods are encrypted.  
6

7       45.    The partially encrypted television signal according to claim 44, wherein the  
8 television signal is a digital television signal, and wherein the period comprises a  
9 packet.  
10

11       46.    The partially encrypted television signal according to claim 44, wherein the  
12 period comprises a video frame.  
13

14       47.    The partially encrypted television signal according to claim 44, wherein the  
15 digital television signal complies with an MPEG standard, and wherein the first  
16 encrypted portion is identified by a first packet identifier, and wherein the second  
17 encrypted portion is identified by a second packet identifier.  
18

19       48.    The partially encrypted television signal according to claim 44, wherein the  
20 digital television signal complies with an MPEG standard, and wherein the  
21 unencrypted portion is identified by a first packet identifier, and wherein the  
22 encrypted portion encrypted under the first encryption method is identified by the  
23 first packet identifier, and wherein the encrypted portion encrypted under the second  
24 encryption method is identified by a second packet identifier.  
25  
26

1 49. A method of encrypting an unencrypted television program, comprising:  
2 encrypting N portions of the television program out of every M portions of the  
3 television program according to a first encryption method; and  
4 leaving a remainder of the television program unencrypted, wherein the  
5 combination of the encrypted portion and the remainder comprises a partially  
6 encrypted television program.

7  
8 50. The method according to claim 49, further comprising distributing the partially  
9 encrypted television program over one of the following: a terrestrial broadcast  
10 system, a cable television system and a satellite television system.

11  
12 51. The method according to claim 49, further comprising assigning a packet  
13 identifier (PID) to data packets containing the encrypted portions and the remainder  
14 of the television program, the packet identifier associating the encrypted portion and  
15 the remainder with the television program.

16  
17 52. The method according to claim 49, further comprising assigning a primary  
18 packet identifier (PID) to data packets containing the encrypted portions and the  
19 remainder of the television program, the packet identifier associating the encrypted  
20 portion and the remainder with the television program; and assigning a secondary  
21 packet identifier (PID) to data packets containing the encrypted portions of each  
22 television program, the secondary packet identifier associating the first encrypted  
23 samples with the television program.

24  
25 53. The method according to claim 49, wherein the N portions comprise N frames  
26 of video.

27  
28 54. An electronic storage medium storing instructions which, when executed on  
29 a programmed processor, carry out the method according to claim 49.  
30

1 55. An electronic transmission medium carrying an encrypted television program  
2 encrypted by the method according to claim 49.  
3  
4  
5

1 56. A method of processing a television signal, comprising:  
2 receiving a television signal comprising:  
3 a first encrypted sample of the television program, the sample being  
4 encrypted under a first encryption method,  
5 a second encrypted sample of the television program, the sample  
6 being encrypted under a second encryption method, and  
7 an unencrypted portion; and  
8 decrypting the first encrypted sample to produce a decrypted sample.  
9

10 57. The method according to claim 56, further comprising decoding the  
11 unencrypted portion and the decrypted sample.  
12

13 58. The method according to claim 56, wherein the television signal is a digital  
14 television signal, and wherein the first encrypted samples and second encrypted  
15 samples comprise first encrypted packets and second encrypted packets, and the  
16 unencrypted portion comprises unencrypted packets.  
17

18 59. The method according to claim 58, wherein the digital television signal  
19 complies with an MPEG standard, and wherein the first encrypted packets are  
20 identified by a first packet identifier, and wherein the second encrypted packets are  
21 identified by a second packet identifier.  
22

23 60. The method according to claim 59, wherein the digital television signal  
24 complies with an MPEG standard, and wherein the unencrypted packets are  
25 identified by a first packet identifier, and wherein the first encrypted packets are  
26 identified by the first packet identifier, and wherein the second encrypted packets  
27 are identified by a second packet identifier.  
28  
29

- 1        61.    The method according to claim 56, carried out in a television device.
- 2
- 3        62.    The method according to claim 56, carried out in a television set-top box.
- 4
- 5        63.    The method according to claim 56, carried out in an integrated circuit.
- 6
- 7        64.    The method according to claim 56, carried out in one of an application
- 8        specific integrated circuit and a field programmable gate array.
- 9

- 1 65. A method of processing digital content, comprising:  
2 receiving a signal containing the digital content, the digital content  
3 comprising:  
4 a first encrypted sample the digital content, the sample being  
5 encrypted under a first encryption method,  
6 a second encrypted sample of the digital content, the sample being  
7 encrypted under a second encryption method, and  
8 an unencrypted portion; and  
9 decrypting the first encrypted sample to produce a decrypted sample.  
10  
11 66. The method according to claim 65, further comprising decoding the  
12 unencrypted portion and the decrypted sample.  
13  
14 67. The method according to claim 65, carried out in an integrated circuit.  
15  
16 68. The method according to claim 65, carried out in one of a television device,  
17 a content player, a PDA and a music player.

1       69.    A method of decoding a television program, comprising:  
2            receiving a television signal having N periods out of every M periods of the  
3       television program encrypted according to a first encryption method, where M is  
4       greater than N, and wherein the same N periods of the television program encrypted  
5       according to a second encryption method, wherein M-N periods are unencrypted;  
6            decrypting the N periods according to a first decryption method to produce  
7       decrypted periods;  
8            discarding the N periods encrypted according to the second encryption  
9       method; and  
10          decoding the decrypted periods and the unencrypted periods.

11  
12       70.    The method according to claim 69, further comprising filtering out the N  
13       periods encrypted according to the second encryption method.

14  
15       71.    The method according to claim 70, wherein the filtering is carried out by  
16       filtering on a packet identifier (PID) associated with data packets.

17  
18       72.    The method according to claim 69, wherein the period comprises data  
19       associated with a frame of video.

20  
21       73.    The method according to claim 69, wherein the period comprises at least one  
22       packet of data.

23  
24       74.    The method according to claim 69, wherein the period comprises data  
25       associated with a frame of audio.

26  
27       75.    An electronic storage medium storing instructions which, when executed on  
28       a programmed processor, carry out the method according to claim 69.

29       76.    The method according to claim 69, carried out in a television device.  
30

1 77. The method according to claim 69, carried out in a television set-top box.

2  
3 78. The method according to claim 69, carried out in an integrated circuit.

4  
5 79. The method according to claim 69, carried out in one of an application  
6 specific integrated circuit and a field programmable gate array.  
7  
8



1       80.    A television set-top box for decoding a television signal, comprising:  
2            a receiver that receives a television signal having:  
3                a first encrypted sample of the television program, the sample being  
4                encrypted under a first encryption method,  
5                a second encrypted sample of the television program, the sample  
6                being encrypted under a second encryption method, and  
7                an unencrypted portion;  
8            a decrypter that decrypts the first encrypted sample to produce a decrypted  
9            sample; and  
10           a decoder that decodes the unencrypted portion and the decrypted sample.

11  
12       81.    The apparatus according to claim 80, wherein the television signal is a digital  
13            television signal, and wherein the first encrypted samples and second encrypted  
14            samples comprise first encrypted packets and second encrypted packets, and the  
15            unencrypted portion comprises unencrypted packets.

16  
17       82.    The apparatus according to claim 81, wherein the digital television signal  
18            complies with an MPEG standard, and wherein the first encrypted packets are  
19            identified by a first packet identifier, and wherein the second encrypted packets are  
20            identified by a second packet identifier.

21  
22       83.    The apparatus according to claim 81, wherein the digital television signal  
23            complies with an MPEG standard, and wherein the unencrypted packets are  
24            identified by a first packet identifier, and wherein the first encrypted packets are  
25            identified by the first packet identifier, and wherein the second encrypted packets  
26            are identified by a second packet identifier.

1 84. A television set-top box for decoding a television program, comprising:  
2 a receiver receiving a television program having N periods out of every M  
3 periods of the television program encrypted according to a first encryption method,  
4 where M is greater than N, and wherein the same N periods of the television  
5 program encrypted according to a second encryption method, wherein M-N periods  
6 are unencrypted;  
7 a decrypter that decrypts the N periods according to a first decryption method  
8 to produce decrypted periods;  
9 filtering means for discarding the N periods encrypted according to the  
10 second encryption method; and  
11 a decoder that decodes the decrypted periods and the unencrypted periods.  
12  
13

14 85. The method according to claim 84, further comprising filtering out the N  
15 periods encrypted according to the second encryption method.  
16

17 86. The method according to claim 85, wherein the filtering is carried out by  
18 filtering on a packet identifier (PID) associated with data packets.  
19

20 87. The method according to claim 84, wherein the period comprises data  
21 associated with a frame of video.  
22

23 88. The method according to claim 84, wherein the period comprises at least one  
24 packet of data.  
25

26 89. An electronic storage medium storing instructions which, when executed on  
27 a programmed processor, carry out the method according to claim 84.  
28

1 90. A method of encrypting a plurality of unencrypted television programs,  
2 comprising:

3 selecting a video frame from each unencrypted television program at a  
4 specified time interval;

5 encrypting the frame according to a first encryption method to create a first  
6 encrypted frame for each television program; and

7 encrypting the frame according to a second encryption method to create a  
8 second encrypted frame for each television program.

9  
10 91. The method according to claim 90, further comprising, combining the first and  
11 second encrypted frames with unencrypted frames of the unencrypted television  
12 programs to produce partially dual encrypted television programs.

13  
14 92. The method according to claim 91, further comprising distributing the partially  
15 dual encrypted television programs over one of a cable television system, a  
16 terrestrial broadcast system , and a satellite system.

17  
18 93. The method according to claim 91, further comprising assigning a plurality  
19 primary packet identifiers (PID) to data packets containing unencrypted portions of  
20 each television program, the primary packet identifiers associating the unencrypted  
21 portions with each particular television program.

22  
23 94. The method according to claim 91, further comprising assigning a plurality  
24 primary packet identifiers (PID) to data packets containing first encrypted frames of  
25 each television program, the primary packet identifiers associating the first  
26 encrypted frames with each particular television program.

1 95. The method according to claim 91, further comprising assigning a plurality of  
2 secondary packet identifiers (PID) to data packets containing second encrypted  
3 frames of each television program, the secondary packet identifiers associating the  
4 second encrypted frames with a particular television program.

5  
6 96. The method according to claim 91, further comprising:

7 assigning a plurality primary packet identifiers (PID) to data packets  
8 containing unencrypted portions of each television program, the primary packet  
9 identifiers associating the unencrypted portions with each particular television  
10 program;

11 assigning the plurality of primary packet identifiers to data packets containing  
12 first encrypted frames of each television program, the primary packet identifiers  
13 associating the first encrypted frames with each particular television program; and

14 assigning a plurality of secondary packet identifiers to data packets  
15 containing second encrypted frames of each television program, the secondary  
16 packet identifiers associating the second encrypted samples with a particular  
17 television program.

18  
19 97. The method according to claim 96, further comprising transmitting system  
20 information to identify the primary and secondary packet identifiers associated with  
21 each television program.

22  
23 98. The method according to claim 90, wherein the specified time interval is  
24 selected at random.

25  
26 99. An electronic storage medium storing instructions which, when executed on  
27 a programmed processor, carry out the method according to claim 90.

28  
29 100. An electronic transmission medium carrying an encrypted television signal  
30 encrypted by the method according to claim 90.

1 101. A method of encrypting an unencrypted television program, comprising:  
2 selecting a frame of the unencrypted television program at a specified time  
3 interval; and  
4 encrypting the frame according to a first encryption method to create a first  
5 encrypted sample for the television program.  
6

7 102. The method according to claim 101, further comprising, combining the first  
8 encrypted frame with unencrypted portions of the television program to produce a  
9 partially encrypted television program.  
10

11 103. The method according to claim 102, further comprising distributing the  
12 partially encrypted television program over a cable television system.  
13

14 104. The method according to claim 102, further comprising assigning a packet  
15 identifier (PID) to data packets containing unencrypted portions of the television  
16 program, the packet identifier associating the unencrypted portion with a particular  
17 television program.  
18

19 105. The method according to claim 102, further comprising assigning a packet  
20 identifier (PID) to data packets containing first encrypted frames of the television  
21 program, the packet identifier associating the first encrypted frames with a particular  
22 television program.  
23

24 106. The method according to claim 102, further comprising assigning a secondary  
25 packet identifier (PID) to data packets containing first encrypted frames of the  
26 television program, the secondary packet identifier associating the first encrypted  
27 samples with a particular television program.  
28  
29

1 107. The method according to claim 102, further comprising assigning a packet  
2 identifier (PID) to data packets containing first encrypted frames and unencrypted  
3 portions of the television program, the packet identifier associating the first  
4 encrypted frames and the unencrypted portions with a particular television program.

5  
6 108. The method according to claim 102, further comprising  
7 assigning a primary packet identifier (PID) to data packets containing  
8 unencrypted portions of the television program, the packet identifier associating the  
9 unencrypted portions with a particular television program; and  
10 assigning a secondary packet identifier (PID) to data packets containing  
11 encrypted frames of the television program, the secondary packet identifier  
12 associating the encrypted frames with the particular television program  
13

14 109. An electronic storage medium storing instructions which, when executed on  
15 a programmed processor, carry out the method according to claim 101.  
16

17 110. An electronic transmission medium carrying an encrypted television program  
18 encrypted by the method according to claim 101.